

L.S.B Meeting Notes. Friday, February 25<sup>th</sup> (7)  
Mining + Minerals Division - Questa Mine  
See Contact List for names of Attendees

Company → Ann Wagner, Env. Programs coordinator, started mtg. at 9:10  
~~stock market~~ TAC membership + mailing list, email comments  
Karrie Neet - purpose to get public comments on issues  
Holland - history brief. This is part of ext. approved  
for a tailings facility. Ext. approved for next 2  
years. b. 2000-2001 mine site. by 4/e 2002  
tailings. mine site 2001 4/e.

This is start of reviews of 9 tec docs re:  
tailings. 10am Tim Kiper, tec cons. for Amigos Bravos

1:30 afternoon session - tec. work plan. close 5pm  
disc. about timeframe, and having agenda before

Paul - wants tec. review + agency reviews. wants  
TRC interaction, rather than just presentation. wants  
fours up on measures/alternatives. Separate up  
for each alternative. (c) Open Pit waiver → look  
at <sup>as</sup> alternative, not as principle equal to all other  
possible alternatives - in order to get all q/t.  
identified. tailings + mine have common G/H  
pathway

### Introductions

Lucy Moore, contract facilitation - starts facilitation  
of meeting

Forest Service - 1<sup>st</sup> mtg. what are opps. for FS report?  
Ann says there are 3 more mtgs. to review  
MMA + get to closeout plan.

Paul says this is an informal mtg. and no comments  
will reach agency. Comments will have to be sent  
to Agency. This mtg. consists of TRC members  
& observers, the TRC ~~not~~ meets, and anyone  
who wants to

996344



Scott M. clarifies agencies

MMD / Env Dept + WQA + Discharge Plan

Plan

This MMA process complies w/ NMED  
Public Participation Process.

So, what comes out of NMED this mtg. w/ has company work out closure plan process contents.

NMED is in process of Obj comments, so will be hearing input but can not officially comment today. official public comment period is \_\_\_\_\_.

christian asks for comments from NMED.

NMED says by next Wednesday.

Game + fish under mining act, obliged to review ~~com~~ documents. MMD has not sent them anything. Jim has not recvd the letter.  
 ↓  
 Fish + game

NMED says - ~~the~~ comments ready when reads  
 ↘  
 NW-discharge plan

- Regulators communicate with Public
- Public interest groups → company
- Susan states EPA role as advisory capacity so not formally commenting, but will submit input to NMED if deemed appropriate as it relates to NPL + Superfund

Back to Paul's idea to separate work plan or afternotes

Scott: can't initiate anything

Agencies: NMED, MMD, Game + fish, EPA, Fish forest service  
 Fish + wildlife, office of natural resources trustee

Paul WP's address NMED questions to company?

Do they respond to questions?

Holland Not satisfied w/ WP. About Load Balance (B),

G + F Can't comment yet until documents

Paul: Do plans address depths necessary?

(not to satisfaction level 0)

Validating + its input parameters

(Italians) Questions about Modeling and also some technical issues - but will put in letter specifically Water issues but what is Authority of ENR. Dept.

- Specifics of details of Work Plan
- appropriateness of Model of this scale + complexity - thus validation is the conditions of Model going to be present at time of closure

Abe: comprehensive load balance study

it proposes raising questions that rest

Quantitative determination re) how much eff. is due to pre-existing scars.

and which are covered and not accessible

(12 month baseline studies)

{pre-dated + were not done)  
mine  
act}

natural scar areas, 10 acres in size.

in Background study, we would monitor discharge flow, effluent, take aerial fotos, acreage pro-rate it, and guess what it would have looked like before MolyCorp.

This is not feasible.

we don't know what a 1946 aerial survey relates to sulphide mapping. ie could be from rock slides, floods, etc.

trying to back step to figure what would have been contributions of mine

Also cont. cites 2 reports, well written of Red River watershed.

- (1) Qual. + quant. data showing impacts  
Aluminum ONRT study 1999.

classic geo-forensic research work

- (2) 1996 study - 2nd study  
Dennis Slifer - ED Report for EPA

Key Arg - in cond balance study is that mine has remediated activities by creating cone of depression. hydrologic cone of dep.

which diverts flow of what would go to river anyway.

This method is not reliable "treatment"  
wants study done, wells, bedrock, Alluvium  
mapping of Potentiometric Surface  
flow - what if partition of flow

GWR sampling at all depths

Active Measurements of Hydraulic Transmissivity or under  
Waste files to Red River.

Extended well field program

Chemical characterizations

Cabin creek confluence on west. - millsite E  
wants technical reliability

Jim via phone Are we doing <sup>true</sup> MMA process? now we are  
in company's Arguments based process?

- 1) so we need Alt. reclam. plans.
- 2) utilizing 30+ years of min. reclam. process we  
need to use techn. that is available as possible
- 3)

Chris: WP don't address current tech because

- 1) 2 years old, 2) there was no MMA, and
- 3) the WP were for site characterization only
- 4) are for original data gathering not for looking at reclamation.

Scott: Agrees - need to design investigation around alternatives  
should be incorporated into Work Plan

Gerry: How to do this? Jim?

Jim: ID. the 4 main critical components (6-8 weeks)

April 1 hearing will need alternatives

April 3, 4, 5 Next MMA mtgs.

Chris regulatory 1 year program + schedule approved  
these studies.

Herric: Regulatory deadline does exist, however 60 day Agencies have been discussing alternatives

Paul Since 1995 SRK submitted reports to NMED  
this is not a 1 year process. The process  
is going too slow.

Abe: Jim, would you approve a 3rd Party to review  
reclamation alternatives.

Jim: Recommends running thru true MMA process  
company has regulatory constraints so how can  
we get true MMA.

Paul: What about the roundtable discussion to come  
up with 3-5 models

Jim: Recommends hiring a re-vegetation specialist  
we should be seeing this by now. We  
Molycorp is both participant as well as ENR.  
consultant. Get prof. help.

Herric: law does not require alternatives

Abe: What about Superfund issue → since it  
will bring in funds?

Scott: Superfund is outside of this, Scotts wants  
to keep it in state - USE WQA.

G & Fish: Work Plans have been piece meal  
submitted. How will EPA + NMED  
interact.

Brenda: Now we will be using NMQA - input now will be useful for whatever mechanism works today is not mutually exclusive to MMD, EPA.

Kerrie: company should keep bigger picture - do not duplicate efforts

Fish & W

Russ: his concerns are current eco issues that need to be addressed sooner - doesn't want to wait 20 years.

Scott: statement vs. long term impacts now and at end of mining

Russ: what about pending NPMES permits

Gorza: NPMES permit is outside area

Scott: NPMES is outside but may affect area Discharge Plan is finalized.

Gorza: DP 1055 deals w/ immediate discharge

Paul: Jim can you detail your concerns on WP and MMA & process?

Jim: MolyCorp needs to decide to do MMA process - that requires involvement of 3rd party - if not then go to permitting route. Company has been down this road. Reg. process + Permitting will make company face other public comment hearings. MMA is an alternative

Gorza: we work w/ Andy about what is likely of MMA process

The prep. of work plan may not be up to snuff but we can expand on them in revisions

<sup>Approved</sup>  
Development schedule for closeout plans was just a few months ago thru MMD

Abe. Re-Veg. Project program  
 Jim comment?  
 Redeposition - slope stability due to his experience  
 Jim:

The veg. program at MolyCorp is not impressive, not aggressive, not based on knowledge base.

If the waste piles (angular) are known to be not stable.

In other sites, achievements have been extraordinary. MolyCorp doesn't set sights high enough.

Should approach MMA process as part of permitting process

Forest Service: My experience is mine reclamation. It is fine what today, mine reclamation techn. today is advanced - are too general. WPs did not include nutrient studies

Susan: Re: Reimbursable Accounts is a fund which is in agreement w/ State - suggests

Scott: Jim, Re: getting list of Alternatives, should company submit another WP with this list

Jim: Yes, we need this. The company will need 3rd party to get this done sooner, perhaps next MMA meeting - we can focus in on the alternatives.

Gryza: we agree to do this

Scott: what do you mean?

Gryza: we to address Sampling, MMA process refine approach.

Everyone: what.

Gryza: will do new WP to address role of MMA process in all WPs

Many: this does not go anywhere

Paul it is still a step.

Brenton

Geyza: we will develop a list of Alternatives

Holland: says this topic is too long to discuss here  
how about we do this at next mtg.

Man, we need to consider extension issues.

Geyza:

of Paul: waiver issue

~~use~~ suggests mtg. to come up w/ Alternatives matrix  
before April 4<sup>th</sup> meeting, ~~the~~ list of ~~all~~  
~~will be~~ ~~be~~ for each WP topic.

Geyza/paul: a subcommittee

Geyza: we prepare initial document when later  
decide if 2nd mtg is necessary.

Chris wants WP to be acceptable.

Holland: we need to address WP now per regulatory.

Scott: Available alternatives is critical to know what  
your investigations should be

Chris: the data we are collecting has to be  
taken anyway

pre-mine water quality issue is always part  
of mine closure plans.

Abe: Brings it back around since everyone is  
stressed \$ + time, so why doesn't company  
use existing techn. + exp., the WP does  
include any techn. docs in bibliography.

Why: Should use 96 + 99 reports as  
previously stated.

Paul: We need a small working group to look at remediation alternatives, then present it to larger TRC.

Scott: Not all treatments not applicable to all site conditions, e.g.) re-grading, water treatment, etc. <sup>slope, cover</sup>

Scott+Gaza: Let us make a list, distribute it, then deal w/ it, without group mtg.

## Breaks

### Load Balancing

Paul: Statistical power of analysis is thin/weak  
Need more samples → more data  
3 models described - could be combined.

Pg 2 Objectives: ☐: ARD Loading  
broadening of types of contamin + damage  
are necessary.

What about Pre 1960 mining?

also need to consider future?

Data sets, validation of models, not address  
inadequate detail

1960-1975 period had a more identifiable  
flow from waste piles to river.

→ 3x tailing spills

- Modeling of Acid Mine Process.

Threshold process vs. Preventing drainage  
✓

acid generation Potential

Pg 2: GW flow assumptions - watershed flow  
unsaturated flow conditions - geochemical  
conditions

Pg 3: timeframes - post closure

pre-mining conditions - sources - use them  
 they serve for WQ issues for WQ  
 prior 1917 pre mining  
 1958 pre pit

Chris What sampling frequency do you feel adequate?

Paul BC Acid Drainage guides are good measure based on rock types  
 look beyond sulfate + calcium

Chris — what about ~~done~~ of Vorchholes? and Red River  
 what sample f for Red River water Quality

- 1) more harder to get pre-mine data
- 2) Gaging stations not thorough - other locations are better - there are seeps - also timing - seasonal sampling

BB

Abe ) discussion about P5 page 7 Work plan for comp.

Chris ) water and load balance study.

Rob What weight will Moly put on this model?

Chris It depends on confidence level, using simple, "Quantitative" "feeling".

- Rob Wants statistical confidence (level infer.) deviation if observed and modeled

## Background characterization study

Scott Looks at surface water quality - how to determine numerical compliance levels for site from background. How to put together all reg. discharges - TMDL.

Rob Wants surface monitoring sooner

ONRT NR damages - must have background WQ  
 (cannot +) How, who, when got comments.

↓  
 (general) discussion - mailing list - Holland

Abe background characterizations

WP heavy on conceptual - light on data

i.e. Should include sediment load

→ estimate sulfate load "algebraically, various" calculation

i.e. Mean conc v median, Runoff

Scars / Fans Natural Scar Areas

Geochemical steady state - can't assume, are not  
 older old. well field program base or debris  
 fans. WP is silent on previous literature yet  
 it is a characterization plan.

Natural scar areas based on <sup>and</sup> lot's only not  
 on geochemical analysis

Alluvial Fan

sulfate - least reactive that is when used in ARD

because it doesn't get sequestered like other  
 minerals, metals.

Goya: Already knows Sulf loading to River today.  
 However, is attributable to diff. loadings  
 from diff. sources.

Kenne using Sulf to determine mass loading

Goya: EPA's TMDL process is same approach

3 Samplings

Abe /

Scott: How will Agency set standards, what about 50%  
 margin of error. Onus is on company to  
 demonstrate background conditions.

Determining pre-existing background conditions

Abe, Chris } Discussion conceptual model, initial numbers, used  
 Paul Scott } to set up work plan model.

Paul over characterization of non-mine portion of watershed  
 Chris agrees to address unsaturated flow and spills in the modeling.

Lunch      Marcia

a) General discussion - Paul, Abe - open pit  
 (Trigger for waiver and back fill pit - safety, environmental soundness)  
 Stabilizing in place some piles  
 terracing  
 Env. Adv. To back filling = less exposure  $\rightarrow$  acid

b) Mine site / Tailings Dam

ABC - is Slope & Sugar Shack Dikes stable?

Holland - no. (as Re-vegetation expert)

Kerry - MND has been concerned about stability

Abe - to protect waste rock with veg. cover

Holland - waste rock = kept away from air + water particularly at acidic sites like at MolyCorp.

Paul - slip failures possible as well as erosion  
 angle of repose - some may be require  
 regrading. impact of cave zone on veg.  
 severity not recognized. - impacts on  
 existing piles - permitted to surface

Doggett - impacts on surface vary with

Goyza - depth of mine tail, ~~depth~~ thickness of  
 ore, incline of terrain

Holland - subsidence issues / areas don't fit in waiver  
 Category - suggests Moly develop alternatives

## Tailings Dam

No agency comments

Paul Vegetative conditions

### Erosion

Ann will be putting out work plan for Tuesday for vegetative test plots  
Moly will be doing veg-test plots

Russ Tailings Cover Suitability - ecoAss

Are we going to get mobility of metals  
molybdenum from animals + plants  
= Protection of wildlife =

Keme MMD Post mining use requirement  
poter

Russ Potential toxicity of molybdenum  
in plants

Sheep + cattle toxicity data exists  
but few other studies on other  
plants

### Borrow Materials

No agency comments

Russ Titles of work plan - language

What are goals of analysis

want to insure good rooting materials  
water availability, holding potential.

Paul Jim recommends a different type of cover  
a water balance cover

Chris (1) soil characteristic cutup would need to be added

soil water characteristics curve - SWCC

soil

Chris suggests doing in-situ density  
about thickness of storage cover

Modeling indicates no difference between  
only 9" cover & 18" cover

Don't need much due to dry climate in  
terms of water barrier.

Paul Tailing Piles has SO<sub>2</sub> + metals and carbon  
Piles may have C/N.

Chris tailings piles have inherent water storage  
and will be seeping  
water in piles come from mill  
Not from rain

Abe about Borrow materials, do we need  
to look for Aluminum

### c) Rooting zone investigation

What means on-site / off-site?

Ann The mine owns other land adjacent  
Chris where they want to do tests, pending  
Davy Forest Service permit

Abe 950

Kernie

2 square km 2km<sup>2</sup> of waste rock  
general to be covered - if everything could  
discussions be covered

borrow in-situ borrow materials  
mats & cap materials - Proctor analysis  
footing  
zone

3 test plots at thickness of 36"

Storage cover test plots

MMD likes 18", 24" + 36" cover

2 month lead time for installing test plot

Factors to be considered

frozen soil ← summer rains

If don't want to wait for rain

Can artificially water, but important to avoid saturation

Test plots is a new technology  
W/in last 5 years.

Call Mary Anne about test plots

Geza: about cover thickness

- ① to cover in segments → control dust if cover now with 9<sup>th</sup> (9") and then year later the reqs require 3 - then he will be reluctant to cover up vegetation
- ② having to look for cover material - maybe on BLM land

Vegetative cover - Test plots - mine site

Doug G. Sugar Shack area problems

- ② Should increase number of alternatives
- ③ regrading + cover issues and stabilization of slopes

Holland agrees

Ensures it for short term, effort

? Brian irrigation usage? ① to get fertilizer  
② to increase growing

Brain Trash dump sites - how will be addressed in Close out plan

b2a we have 2 landfills (exempt) and are looking at clean up have been using for 10 years. Now using for construction debris

Brain Is there inventory of sites used historically, and what was dumped in them.

~~Chet~~ steps to be taken to approve work plans. MND will review plans alongwith permitting staff. MND has to have letter out to mely corp by next wednesday.

Then 2-3 months to approve work plan.

Aerial Reconnaissance  
Background study - vs Forest Service  
Work Plan Permits  
Load Balance study - for Drilling before high flow

Meeting Date: April, 3, 4, 5  
at Questa

## Next mtg proposed Agenda Items

- ① today's meeting notes
- ② Work Plan approval
- ③ water Rock Test Plans
- ④ Wildlife Impact Assess / Studies
- ⑤ Veg. Plot - tailings
- ⑥ Alternatives - MMA - Small Group Process presents
- ⑦ get Andy + Jim's input about MMA